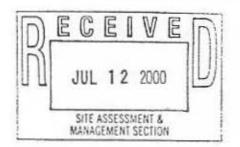
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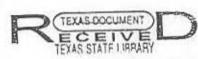
Trends in Texas Commercial Fishery Landings, 1972-1997 by Lance Robinson, Page Campbell, and Linda Butler

Management Data Series No. 158 1998



COASTAL FISHERIES DIVISION

4200 Smith School Road Austin, Texas 78744





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by

Lance Robinson, Page Campbell, and Linda Butler

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Texas Parks and Wildlife Department Coastal Fisheries Division 4200 Smith School Road Austin, Texas 78744

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ABSTRACT

This report summarizes annual commercial landings and ex-vessel value statistics of finfish and shellfish harvested from Texas bays and the Gulf of Mexico off Texas. Seafood dealers submitted monthly reports of purchases of shrimp, finfish, crabs, and oysters to either Texas Parks and Wildlife Department or National Marine Fisheries Service. These landings and value data for individual species groups are summarized by bay or Gulf area from which the product was taken by month landed. Total coastwide landings in 1997 were more than 81 million pounds with an exvessel value of over \$188 million.

Shrimp accounted for 79% of the weight and 88% of the ex-vessel value of all seafood landed in 1997. Shrimp landings for Texas were the lowest since 1972, however the value was higher than either 1995 or 1996 levels. Bay shrimp landings increased 19% from 1996 levels, whereas Gulf landings fell 20% from 1996 levels. Gulf landings were the lowest since 1972. During 1997 blue crab, Eastern oyster, and finfish made up 7%, 6%, and 8% of total landings, respectively, and 2%, 6%, and 4% of the total ex-vessel value, respectively. Total finfish landings in 1997 fell 17% from 1996. However, landings for king mackerel and swordfish rose 78% and 98%, respectively.

INTRODUCTION

Gulland (1977) emphasized the importance to the fishery manager of knowing the landings of a marine resource. Landings data from both recreational and commercial fishermen are required to assess the needs for and the impacts of saltwater fishing regulations. Economic and sociologic information can also be inferred from landings data to allow for management based on the concept of optimum sustainable yield (Radovich 1975; Demory and Golden 1983; Prochaska and Cato 1983). Annual recreational fish landings in Texas have been estimated since 1974 based on on-site interviews at fishing access sites (Warren et al. 1994; TPW Unpublished Data).

Reports of commercial landings of marine species from Texas bays and the Gulf of Mexico (Gulf) off Texas (Figure 1) have been collected from seafood dealers since 1887 (Perret et al. 1980). These early data were collected sporadically until 1936 when annual surveys were initiated (Game, Fish and Oyster Commission 1937). Since 1936, the Texas Parks and Wildlife Department (TPW) has monitored the landings and value of marine fishes, Eastern oysters (Crassostrea virginica), crabs and shrimp through a mandatory self-reporting system currently known as the Monthly Aquatic Products Report (MAPR, Figure 2) which is completed by seafood dealers (and bait dealers since September 1991). Since 1956, the National Marine Fisheries Service (NMFS) has collected landings data on shrimp through dealer reports and shrimp vessel crew interviews (Prytherch 1980), while TPW has continued to collect data on finfish, crabs and Eastern oysters. An informal data exchange between agencies permitted the compilation of total self-reported landings of marine species. Beginning 1 April 1985, TPW and NMFS instituted a formal cooperative agreement to collect and exchange commercial fisheries statistics.

From 1977 through 1981, additional landings information, including daily landings by species, was required of commercial finfish fishermen through Individual Sales Transaction (IST) forms. The use of the IST form was discontinued in March 1982 by the TPW Commission because the data were inaccurate and the reporting system was largely duplicative (Green and Thompson 1981).

This report summarizes the landings and ex-vessel value of seafood and bait purchased from commercial fishermen by seafood and bait dealers and reported to TPW, and landings and ex-vessel value data collected by NMFS, from 1972 through 1997.

MATERIALS AND METHODS

Licensed seafood and bait dealers are required to complete a MAPR (Figure 2) each month, listing the water body, total weight and price paid for each species purchased from commercial fishermen. A list of fishes commonly caught and reported by the commercial sector are listed in Table 1. The report from each dealer, detailing the preceding month's transactions, was due at TPW's Seabrook Marine Laboratory office on or before the 10th day of each month. The Division of Statistics-Market News, NMFS, collected shrimp and menhaden landings and value

data. Shrimp landings reported on MAPRs (except those reported as live and dead bait) were provided to NMFS and landings of shrimp, finfish and other seafood products gathered by NMFS were provided to TPW. Finfish landings collected by NMFS but not purchased or handled by licensed seafood dealers are not included in this report. Commercial fishermen fishing in 1997 were subject to the fishing seasons listed in Table 2.

All MAPRs were checked for completeness by TPW personnel. If errors were identified, the submitting dealer was contacted to verify accuracy of the data. Except for Eastern oysters all seafcod products not reported in live weight by dealers were converted to live weight (round weight) using conversion factors listed in Appendix A. Eastern oyster landings were converted to meat weight (Appendix A: Table A.2).

Landings of Eastern oysters from private leases were reported by leaseholders through MAPRs, monthly oyster harvest reports submitted to the Seabrook office of TPW and annual summary forms submitted to the Texas Department of Health, Austin. In case of discrepancies between monthly and annual summaries, the highest values for landings were used.

Gulf shrimp landed at Texas ports and reported to TPW by the Division of StatisticsMarket News, NMFS, may include shrimp harvested from the waters of other states or from area:
outside the territorial waters of the U.S. in addition to those from Texas waters. NMFS reports
shrimp landings from statistical grid zones along the entire U.S. Gulf coast, including Texas, in
their publication Gulf Coast Shrimp Data. Gulf shrimp landings in this report are pooled for all
grid zones off Texas. Unless otherwise noted, shrimp landings reported do not include live or
dead bait.

Gulf menhaden (Brevoortia patronus) caught off Texas and landed in Louisiana are reported to TPW by NMFS, Population Dynamics Team, Beaufort Laboratory. Menhaden landings for 1997 were not finalized by NMFS in time to include in this report and should be considered incomplete.

Ex-vessel price per pound in Tables 17 and 18 were determined by taking the total value for each species and dividing by each corresponding total weight. Count sizes and weight classes were not considered.

Any difference in this report compared to previous reports is due to updating of the data base and the most recent report should be considered the most accurate. Except where noted, data are reported by calendar year.

RESULTS

During the twenty-six years covered by this report (1972-97) 2.5 billion pounds of seafood products (over \$4.2 billion) were reported harvested from Texas bays and the Gulf of Mexico and landed in Texas (Tables 3-16). Total landings fluctuated irregularly while ex-vessel value

generally increased through 1986 and fluctuated thereafter (Figure 3). Long term trends in landings and ex-vessel value of shrimp, crabs, Eastern oysters and finfish are presented in Figures 1, 5, 6 and 7.

3

During the last five years (1993-1997), brown shrimp (Penaeus aztecus), pink shrimp (P. duorarum), and white shrimp (P. setiferus), represented about 75% of the total coastwide bay and Gulf landings by weight and 88% of total ex-vessel value (Figure 8). Blue crabs (Callinectes sapidus), represented 7% of total landings and 2% of ex-vessel value. Eastern oysters represented 6% of total landings and ex-vessel value. Finfish collectively represented 8% of total landings and 4% of ex-vessel value. Gulf landings constituted 59% of total landings and 74% of total ex-vessel value. King mackerel (Scomberomorus cavalla) and swordfish (Xiphias gladius) landings increased 78% and 98%, respectively over 1996 landings (Table 13). Ex-vessel price for these two species also increased (king mackerel, 65%; swordfish, 52%) during 1997 (Table 14).

A comparison of landings among bay systems for 1993 through 1997, indicates that landings from the Galveston Bay system (Figure 9) exceeded all others for white shrimp (53%). Most brown and pink shrimp landings (73%) were from Galveston Bay, Matagorda, and Aransas bays. Blue crabs were landed predominately (49%) from the Galveston Bay and Sabine Lake systems. Eastern oysters were landed almost exclusively from Galveston Bay (87%). Most finfish (78%) were landed in Corpus Christi Bay, upper Laguna Madre, and lower Laguna Madre (Figure 10). A comparison of the distribution of finfish landings among Gulf grid zones during the same interval indicates that landings were greatest (57%) in grid zone 18 (Figure 10).

During the last five years (1993-1997), mean price per pound paid to commercial fishermen for black drum (*Pogonias cromis*) and flounder (*Paralichthyes spp.*) has generally increased (Table 17). In 1997 black drum and flounder saw the largest one year reduction in landings over the previous year (35% and 38%, respectively) (Table 3). Ex-vessel values for these two species fell accordingly (black drum 39%; flounder 42%) (Table 4). The 1997 mean price per pound for black drum and flounder fell slightly from 1996 levels (7% and 6%, respectively) (Table 17). However, the 1997 mean price per pound reported for flounder is still the third highest reported since 1972. Snapper mean price per pound was down 9% in 1996 (Table 17).

Brown and pink shrimp landings for 1997 (Table 3) fell 15% while ex-vessel values rose 1% from 1996 values (Table 4). Mean price per pound paid for brown and pink shrimp rose 18% over 1996 levels (Table 18). White shrimp landings fell 11% in 1997. Ex-vessel values rose 3% but mean price per pound for white shrimp was up 15% over 1996 averages (Table 18).

Coastwide blue crab landings and ex-vessel values fell 9% and 13%, respectively from 1996 levels (Tables 3 and 4). Mean price per pound for crabs also fell in 1997 (Table 18). Eastern oyster landings and ex-vessel values for 1997 fell from 1996 levels (20% and 11 %, respectively) however, average price per pound of meats (Table 18) continued to rise (11% over 1996 levels).

Annual summaries of landings and ex-vessel value by bay system and Gulf grid zone are presented in Appendices B and C. Monthly summaries of 1997 landings and ex-vessel values for Texas bay systems and for Gulf grid zones off Texas are presented in Appendices D and E.

Annual weight and ex-vessel value of Gulf menhaden caught off Texas but landed commercially in Louisiana during 1977-1997 are presented in Appendix F. During this 20-year period, landings and ex-vessel value of menhaden have fluctuated substantially but a long-term trend is not obvious.

Volume of Eastern oysters transplanted annually to private oyster leases in Texas bays, and the weight and ex-vessel value of Eastern oysters harvested annually from leases from 1977 to 1997 are presented in Appendix G. Number of leases and total acreage leased have remained relatively constant since 1979, whereas total weight landed and ex-vessel value have fluctuated among years. During 1997, almost 1 million pounds of meat with an ex-vessel value of over \$2.5 million were landed in Texas from oyster leases. This represents a 32% reduction in lease harvest over 1996 landings.

Number of commercial licenses sold in Texas in each fiscal year (September-August) from 1956 to 1997 are presented in Appendix H. During the last five years (1993-1997), the general trend in the number of retail fish dealer licenses has been variable (Appendix H: Table H.1.). However, during 1997, total retail license sales fell 12% from 1996. The number of wholesale dealer licenses fell 11% from 1996, but this still represents the second highest level since 1956. Since 1995 bay shrimp boat licenses and bait shrimp boat licenses have declined 17% and 18%, respectively (Table H.4.). This may be due to the 1995 implementation of the Shrimp License Management Program for these fisheries.

Annual and monthly bait shrimp summaries of 1997 landings and ex-vessel value by bay system and Gulf grid zone are presented in Appendices I and J. Live bait shrimp and dead bait shrimp landings and value appear to have increased since 1994 (Figure 11). Shrimp landings reported as bait and ex-vessel value increased by 29% and 15%, respectively, over 1996 levels (Table I.1). Over 48% of the reported live bait shrimp and 76% of the dead bait shrimp were landed in the Galveston Bay system (Table I.2.b). This represents about 45% and 67%, respectively, of the total ex-vessel value reported for live and dead bait shrimp.

DISCUSSION

About 81.5 million pounds of seafood with an ex-vessel value of over \$188 million were reported for 1997. Total landings in 1997 fell by 12% over 1996 values. Bait shrimp (live and dead) landings in 1997 were over 1.8 million pounds with an ex-vessel value of over \$3.5 million. Using an approximate expansion factor of three (Grubb 1973), the total economic impact of this industry at the wholesale level (including live and dead bait shrimp) in Texas for 1997 was over \$576 million. This expansion does not include the incomplete landings of menhaden caught in 1997 off Texas but landed in Louisiana (Table F.1.).

Brown shrimp is the single most valuable species in the commercial fishery. Although landings of brown shrimp are not reported separately from those of pink shrimp, Christmas and

Etzold (1977) have estimated that brown shrimp constitute about 95% of the landings of these two species combined. The value of the bay fishery relies primarily on brown shrimp followed by white shrimp, Eastern oysters, blue crabs and finfish in order of decreasing value.

Although dealer reports have been used to determine relative commercial seafood landings, several assumptions must be made. In particular, the amount of inaccurate or incomplete reporting is unknown and must be considered constant when making temporal or spatial comparisons. Different reporting requirements can affect the amount of non-reporting, and thus estimates of relative abundance based on reported landings (Green and Thompson 1981).

Deficiencies in reporting requirements and enforcement also affect the utility of commercial landings data. The 72nd Legislature enacted legislation, effective 1 September 1991, which increased the maximum penalty to \$500 and possible license forfeiture for failing to file a required report (Anonymous 1991). Present Texas law, however, does not require all commercial landings to be reported. Unlicensed consumers who purchase seafood products directly from commercial fishermen without the intent to resell the products are exempt from reporting. The effect of nonreporting for this sector will continue to be unknown until the program is further developed. Marine products harvested by licensed commercial fishermen and sold directly to a restaurant owner, operator or employee for consumption by the restaurant's patrons on the restaurant's premises are not reportable. Marine products harvested as bait and sold to a licensed bait or seafood dealer were not reportable until September 1991. However, comprehensive implementation of the bait program was not completed until 1994. Increases in reported landings in bait shrimp from 1996 to 1997 may have been due to non- or incorrect reporting of bait shrimp in previous years. Reporting compliance and accuracy has improved, due primarily to increased personal contacts by Coastal Fisheries Division personnel and improved law enforcement. Although the MAPR form provides a section for gear used, reporting is low, probably because it is not mandatory at this time. This limits the ability to provide estimates of commercial fishing effort by gear type for each species landed. These deficiencies may limit the use of these commercial data for fisheries management purposes.

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Table 1. List of common and scientific names of species caught or landed in Texas.

Common name	Scientific name*	
FINFISH		
Alligator gar	Lepisosteus spatula	
Atlantic croaker	Micropogonias undulatus	
Atlantic cutlassfish	Trichiurus lepturus	
Atlantic moonfish	Selene setapinnis	AV.
Atlantic spadefish	Chaetodipterus faber	5 3
Black drum	Pogonias cromis	
Bluefish	Pomatomus saltatrix	
Blue runner	Caranx crysos	
Cobia	Rachycentron canadum	
Codfish	Family Gadidae	
Crevalle jack	Caranx hippos	
Cusk eel	Family Ophidiidae	
Dolphin	Coryphaena hippurus	
Dolphin	согурпасна тррага	
Flounder		
Gulf flounder	Paralichthys albigutta	
Southern flounder	Paralichthys lethostigma	
Florida pompano	Trachinotus carolinus	
Gafftopsail catfish	Bagre marinus	
Great barracuda	Sphyraena barracuda	
Greater amberjack	Seriola dumerili	
Grouper		
Black grouper	Mycteroperca bonasi	
Jewfish	Epinephelus itajara	
Nassau grouper	Epinephelus striatus	
Scamp	Mycteroperca phenax	
Warsaw grouper	Epinephelus nigritus	
Yellowedge grouper	Epinephelus flavolimbatus	
Yellowfin grouper	Mycteroperca venenosa	
Yellowmouth grouper	Mycteroperca interstitialis	
0.50		
Gulf butterfish	Peprilus burti	
Herrings	Family Clupeidac	
Killifish	Family Cyprinodontidae	
		5
Kingfish		
Gulf kingfish	Menticirrhus littoralis	
Southern kingfish	Menticirrhus americanus	
Mackerel		
Mackerel King mackerel	Scomberomorus cavalla	

Common name	Scientific names	
FINFISH (Continued)		
Menhaden	Brevoortia sp.	
Mullet		
Striped mullet	Mugil cephalus	
White mullet	Mugil curema	2
white muliet	wagii curema	
Oilfish	Ruvettus pretiosus	
Pinfish	Lagodon rhomboides	
Pigfish	Orthopristis chrysoptera	
Porgies	Family Sparidae	
Red drum	Sciaenops ocellatus	
Santana		
Seatrout Sand seatrout	Cynoscion arenarius	
Silver seatrout	Cynoscion nothus	
	Cynoscion nebulosus	
Spotted seatrout	Cynoscion neodiosus	
Shark	Section 12 to 12 t	
Atlantic sharpnose	Rhizoprionodon terraenovae	
Blacktip	Carcharhinus limbatus	
Bull	Carcharhinus leucas	
Greater hammerhead	Sphyrna mokarran	
Shortfin mako	Isurus oxyrinchus	
Sheepshead	Archosargus probatocephalus	
Snake eel	Family Ophichthidae	
Snapper		
Lane snapper	Lutjanus synagris	
Red snapper	Lutjanus campechanus	
Vermillion snapper	Rhomboplites aurorubens	
Yellowtail snapper	Ocyurus chrysurus	
Snook	Family Centropomidae	
Stingray	Family Dasyatidae	
Swordfish	Xiphias gladius	4
Tilefish	Lopholatilus chameleonticeps	
Triggerfish, gray	Balistes capriscus	
Tuna		
Atlantic bonita	Sarda sarda	
Biackfin	Thunnus atlanticus	
Little	Euthynnus alletteratus	
Yellowfin	Thunnus albacares	
Wahoo	Acanthocybium solanderi	

Table 1. (Cont'd).

Common name	Scientific name*
SHELLFISH	
Atlantic bay scallop	Argopecten irradians
Atlantic rangia	Rangia cuneata
Crab	1 1
Blue crab	Callinectes sapidus
Stone crab	Menippe adina
Oyster	56
Eastern oyster	Crassostrea virginica
Lobster	
Shovelnose	Family Scyllaridae
Spiny	Panulirus argus
Shrimp	
Brown shrimp	Penaeus aztecus
White shrimp	Penaeus setiferus
Pink shrimp	Penaeus duorarum
Other shrimp	
Rock shrimp	Sicyonia brevirostris
Mantis shrimp	Squilla empusa
Royal red shrimp	Hymenopenaeus robustus
Seabob	Xiphopeneus kroyeri
Squid	
Brief squid	Lolliguncula brevis
Long-finned squid	Loligo pealei

^{*}Scientific names taken from Robins et al. (1991), Christmas and Etzold (1977), Hofstetter (1977), Leary (1967), Rathjen (1973) and Turgeon et al., (1988).

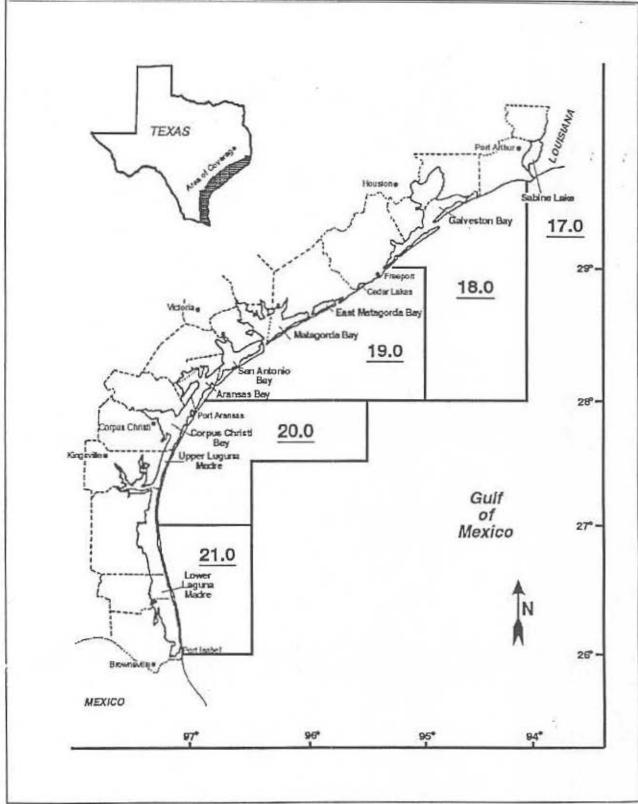


Figure 1. Texas bay systems and Gulf of Mexico grid zones.

Table B.11. Weight (lb) of each species landed connercially from the Aransas Bay system, 1972-1997.

			Finfish							Shellfis	h				
	-						-	Shrin	P						
Year	Black drum	Flounder	Sheeps- head	Mullet	Other	Total	Brown and Pink	White	Other	Total	Blue Crab	Eastern Oyster	Other	Total	Grand
1972	91561	36867	18462	8074	528730	683694	137494	1261494	0	1398988	1338870	60553	0	2798411	3482105
1973	128985	19607	44186	8665	517209	718652	872186	997602	0	1869788	1272791	9940	0	3152519	3871171
1974	118308	43524	52350	3500	471798	689480	210910	448238	0	659148	1079323	9888	0	1748359	2437839
1975	118035	65520	27073	8795	500670	720093	486664	589222	0	1075886	892434	12381	0	1980701	2700794
1976	173178	89454	49203	342	835620	1147797	732643	576593	0	1309236	1318761	24158	521	2652676	3800473
1977	123441	68100	37993	2048	430746	662328	473954	1781140	0	2255094	2244568	65573	0	4565235	5227563
1978	81282	41200	33778	1870	252656	410786	659810	993356	0	1653166	2051177	119994	0	3824337	4235123
1979	24064	42414	21264	1051	185366	274159	1427626	1227415	0	2655041	2436264	96013	0	5187318	5461477
1980	36919	58005	11954	14951	251814	373643	1010885	824648	0	1835533	2716056	21588	0	4573177	4946820
1981	20618	46985	26932	3197	81037	178769	1744416	726693	0	2471109	1777297	62369	0	4310775	4489544
1982	36491	119852	59483	8851	800	225477	1916457	841457	0	2757914	2150379	51509	125	4959927	5185404
1983	51850	67796	27397	13606	4561	165210	3122304	792925	0	3915229	2508983	117119	105	6541436	6706646
1984	16790	75233	5510	0	102	97635	2789635	1747920	0	4537555	2129660	359952	2400	7029567	7127202
1985	15656	44605	11265	0	6300	77826	2551706	806467	252	3358425	2231473	216817	5080	5811795	5889621
1986	47641	90467	15980	33	3640	157761	2365073	1591075	. 0	3956148	936042	97126	6938	4996254	5154015
1987	46396	70065	29887	49681	2758	198787	3308913	1155994	0	4464907	1683562	433189	32432	6614090	6812877
1988	37447	27885	3917	1178	9230	79657	2789878	1050430	0	3840308	2571851	276385	175450	6863994	6943651
1989	2094	15375	165	3600	64	21298	1967067	215814	0	2182882	405087	118617	115552	2822138	2843436
1990	26170	9738	1866	6561	811	45146	3558134	1917668	0	5475802	766104	11237	118173	6371316	6416462

Table B.11. (Cont'd)

			Finfish					Shellfish							
						Total		Shrim	p q						
Year	Black drum	Flounder	Sheeps- head	Hullet	Other		Brown and Pink	White	Other	Total	Blue	Eastern Oyster	Other	Total	Grand Total
1991	23989	33976	517	0	345	58827	4883333	2239425	0	7122758	868176	0	44322	8035256	8094083
1992	25638	40063	3954	1281	2169	73105	1572490	2726912	0	4299402	997576	0	12858	5309836	5382941
1993	64894	41338	8768	279	119	115398	2293107	1469728	0	3762835	1487417	34598	11342	5296192	5411590
1994	119471	43015	11499	167	4922	179074	3415163	568965	0	3984128	387132	29594	19449	4420303	4599377
1995	243030	74557	16683	354	9628	344252	3017457	195796	0	3213253	492426	95814	62911	3864404	4208656
1996	148427	50313	17991	397	10933	228061	2269902	278722	0	2548623	298143	30101	51717	2928584	3156645
1997	174761	58826	22681	3322	16927	276517	3103272	3410	0	3106681	337035	436678	20917	3901311	4177828

Table B.13. Weight (lb) of each species landed commercially from the Corpus Christi Bay system, 1972-1997.

			Finfish							Shellfish					
	_						On the second	Shrin	kb						
Year	Black drum	Flounder	Sheeps- head	Mullet	Other	Total	Brown and Pink	White	Other	Total	Blue Crab	Eastern Oyster	Other	Total	Grand
1972	102876	8496	8383	420	196594	316769	51842	324846	0	376688	70652	0	0	447340	764109
1973	220175	17512	35138	15255	338300	626380	396221	873026	0	1269247	41068	0	212	1310527	1936907
1974	201074	37985	91358	1101	415022	746540	150052	292036	0	442088	326220	0	. 0	768308	1514848
1975	205685	56334	78758	1152	322229	664158	482839	461076	0	943915	125753	1050	0	1070718	1734876
1976	161758	25725	84427	1700	280961	554571	397220	410269	0	807489	123761	0	0	931250	1485821
1977	199848	49128	116863	73	169306	535218	738572	567956	0	1306528	102750	0	0	1409278	1944496
1978	400845	44879	126860	0	259081	831665	910075	521680	0	1431755	9307	0	0	1441062	2272727
1979	383315	68726	201684	34680	272046	960451	1166697	1052891	0	2219588	50498	0	116	2270202	3230653
1980	198629	26813	251267	69790	315337	861836	1469014	400763	0	1869777	17448	0	0	1887225	2749061
1981	58074	5880	51927	23592	188663	328136	1149681	336542	0	1486223	7723	0	0	1493946	1822082
1982	58262	36632	43574	8568	1685	148721	708245	400062	0	1108307	141558	0	0	1249865	1398586
1983	105884	74422	87195	0	9186	276687	1135421	466130	0	1601551	231757	0	35	1833343	2110030
1984	64620	32236	31185	1515	1075	130631	2393305	1511141	0	3904446	76135	0	1014	3981595	4112226
1985	29309	86770	39254	4422	18723	178478	1404056	274707	0	1678763	132786	0	78237	1889786	2068264
1986	58969	120588	20443	358	23920	224278	993964	611059	0	1605023	877180	0	43560	2525763	2750041
1987	105461	65419	21379	0	24710	216969	1309794	764332	0	2074126	267622	403	18302	2360453	2577422
1988	136953	33082	59716	0	2289	232040	981943	463379	0	1445322	202774	175	37377	1685648	1917688
1989	63773	7757	2535	0	2103	76168	895123	88119	0	983242	948543	0	29743	1961528	2037696
1990	151628	9634	540	354	8629	170785	1976752	1344956	0	3321708	665532	35	21234	4008509	4179294

Table B.13. (Cont'd)

			Finfish					Shellfish							
	Black drum							Shrin	p q				Other		
Year		Flounder	Sheeps- head	Mullet	Other	Total	Brown and Pink	White	Other	Total	Blue Crab	Eastern Oyster		Total	Grand Total
1991	112772	44831	4485	3412	17165	182665	2415302	990209	331	3405842	112180	280	6991	3525293	3707958
1992	300710	93777	11518	123	32960	439088	2441301	1238485	0	3679786	508370	0	22154	4210310	4649398
1993	282113	52161	13044	121	12898	360337	1526056	675493	0	2201549	973641	0	2216	3177406	3537743
1994	375588	66664	9369	3051	37322	491994	2007885	421509	0	2429394	153625	0	14117	2597136	3089130
1995	598421	48323	17549	1693	48201	714187	1969355	168949	0	2138304	50459	0	21354	2210117	2924304
1996	946497	64183	33079	1130	24275	1069164	997384	93033	0	1090417	20271	0	10267	1120955	2190119
1997	301513	15909	7351	605	20421	345799	1692219	12666	0	1704886	16453	0	20869	1742208	2088007

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Shellfish Finfish Blue Grand Black Sheeps-Other Mullet Cobia Grouper Snapper Other Total crab Total Total drum Flounder head Year **B51** 63306... 66975

Weight (lb) of each species, except shrimp, landed commercially from the Gulf of Mexico grid zone 20.0 during

1972-1997.

Table C.7. (Cont'd)

					Finfish						Shellfish		
Year	Black drum	Flounder	Sheeps- head	Mullet	Cobia	Grouper	Snapper	Other	Total	Blue	Other	Total	Grand Total
1991	6	4827	133	597	1377	69234	69603	37996	183773	0	0	0	183773
1992	0	170	294	38	107	51268	132179	43865	227921	0	781	781	228702
1993	32	4509	179	1968	507	65170	123219	44176	239760	0	856	856	240616
1994	1928	0	708	475	545	56025	130366	50533	240580	794	30	824	241404
1995	0	5307	0	0	749	76164	145321	162870	390411	182	65	247	390658
1996	9342	5544	601	145	1100	23695	114484	113166	268077	0	382	382	268459
1997	0		0	107	190	27121	58915	157560	243893	0	100	100	243993

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Table D.11. Weight (lb) of each species landed commercially from the Aransas Bay system during 1997.

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Species	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
FINFISH													
Alligator gar	0	0	0	0	0	138	0	0	0	0	0	0	138
Atlantic croaker	. 0	0	11	61	1771	2214	1853	3177	1809	304	17	0	11217
Atlantic cutlassfish	0	0	488	0	417	0	1315	422	457	0	0	0	3099
Black drum	353	11891	19499	66	140	22091	23916	27940	366	11008	29425	28066	174761
Flounder, unclassified	358	1573	517	465	4204	6172	6399	4419	7871	1568	23234	2046	58826
Gar, unclassified	0	0	. 0	0	0	0	0	466	0	0	0	0	466
Killifish	32	41	37	9	23	70	45	48	36	37	0	0	378
Mullet, unclassified	5	0	30	30	0	56	884	845	1244	154	42	32	3322
Sheepshead	344	4207	6093	468	1164	1443	957	990	2715	903	1693	1704	22681
Snake eel, unclassifie	0	0	0	0	0	1	0	0	0	0	0	0	1
Unclassified scrap	9	0	0	17	29	54	113	798	608	0	0	0	1628
Total finfish	1101	17712	26675	1116	7748	32239	35482	39105	15106	13974	54411	31848	276517
SHELLFISH													
Shrimp (heads on)										11002800455	100000000000000000000000000000000000000	1554	12245705250000
Shrimp, brown	852	105	2343	34016	915583	966518	275107	177007	407356	278622	45743	21	3103272
Shrimp, white	0	0	139	702	37	. 0	25	1201	454	658	194	0	3410
Total shrimp	852	105	2481	34718	915620	966518	275132	178208	407810	279279	45937	21	3106681
Crab, blue	3199	6534	8419	8901	25109	114933	30236	24959	32140	35923	27999	18683	337035
Crab, stone	2152	4144	1456	788	524	360	428	1472	2580	1552	288	1436	17180
Oyster, Eastern	74235	82320	108675	132458	0	0	0	0	0	0	26548	12442	436678
Shrimp, mantis	0	0	17	0	0	0	0	0	0	0	0	0	17
Squid, unclassified	0	0	100	1589	837	790	298	51	33	5	17	0	3720
·Total shellfish	80438	93103	121148	178454	942090	1082601	306094	204690	442563	316759	100789	32582	3901311
Grand Total	81539	110815	147823	179570	949838	1114840	341576	243795	457669	330733	155200	64430	4177828

March April Species Jan Feb Hay June July Sept Nov Dec Total FINFISH Alligator gar Atlantic croaker Atlantic cutlassfish Black drum Flounder, unclassified Gar, unclassified Killifish Mullet, unclassified C Sheepshead Snake eel, unclassifie Unclassified scrap Total finfish SHELLFISH Shrimo (heads on) Shrimp, brown Shrimp, white B22137 Total shrimp Crab, blue Crab, stone Oyster, Eastern . Shrimp, mantis Squid, unclassified 140737 135830 Total shellfish 237222 377229 874377 1075372 263456 379191 895343 1129201 406482 491377 892517 523760 224038 142432 153277 Grand Total

Ex-vessel value (\$) of each species landed commercially from the Aransas Bay system during 1997.

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Table D.13. Weight (lb) of each species landed commercially from the Corpus Christi Bay system during 1997.

Species	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
FINFISH													
Atlantic croaker	0	0	0	0	386	989	1580	1477	915	186	8	0	5541
Atlantic cutlassfish	0	0	0	0	2577	5279	1909	4118	206	26	0	0	14115
Black drum	72055	23752	18627	14088	15470	12447	34421	20581	51572	18457	7256	12787	301513
Flounder, unclassified	889	216	261	102	925	0	510	2470	497	2037	2158	5844	15909
Gar, unclassified	0	0	0	0	0	0	35	0	0	0	0	0	35
Killifish	0	0	7	0	0	0	0	0	0	0	0	11	18
Mullet, unclassified	0	7	11	0	0	0	0	8	231	179	82	87	605
Sheepshead	2856	40	292	321	111	0	56	1287	91	31	93	2173	7351
Snake eel, unclassifie	0	0	0	0	2	26	0	0	0	0	0	0	. 28
Unclassified scrap	0	0	0	0	10	15	190	255	202	6	6	0	684
Total finfish	75800	24015	19198	14511	19481	18756	38701	30196	53714	20922	9603	20902	345799
SHELLFISH													
Shrimp (heads on)													
Shrimp, brown	0	0	7342	76572	652984	422308	139432	81733	62450	177544	70268	1586	1692219
Shrimp, white	28	0	0	86	1149	. 0	976	1731	3674	1498	2527	996	12666
Total shrimp	28	0	7342	76658	654133	422308	140409	83464	66125	179043	72796	2582	1704886
Crab, blue	33	415	902	2028	1240	1321	3824	3884	791	1123	685	207	16453
Crab, stone	28	0	1800	1260	436	260	2448	2148	6696	0	0	160	15236
Squid, unclassified	15	29	215	1405	1744	979	570	312	238	115	11	. 0	5633
Total shellfish	104	444	10259	81351	657553	424868	147251	89808	73850	180281	73492	2949	1742208
Grand Total	75904	24459	29457	95862	677034	443624	185952	120004	127564	201203	83095	23851	2088007

Table D.14. Ex-vessel value (\$) of each species landed commercially from the Corpus Christi Bay system during 1997.

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Species	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
FINFISH													
Atlantic croaker	0	0	0	0	2059	5709	9450	8875	5539	1055	53	0	32740
Atlantic cutlassfish	0	0	0	0	2186	4821	1462	2751	166	25	0	0	11411
Black drum	50779	19168	16560	14117	17041	16181	46468	27784	42614	24348	4360	13896	293314
Flounder, unclassified	1637	550	641	201	1749	0	1357	5965	1234	4193	3325	8090	28943
Gar, unclassified	0	0	0	0	0	0	26	0	0	0	0	0	26
Killifish	0	0	73	0	0	0	0	0	0	0	0	138	210
Mullet, unclassified	0	34	53	0	0	0	0	52	692	557	265	281	1934
Sheepshead	1361	14	142	160	50	0	31	726	40	26	56	958	3564
Snake eel, unclassifie	0	0	0	0	4	52	0	0	0	. 0	0	0	56
Unclassified scrap	0	0	0	0	53	72	1250	1462	1156	39	39	0	4072
Total finfish	53777	19765	17469	14478	23142	26836	60045	47615	51441	30243	8098	23362	376271
SHELLFISH													
Shrimp (heads on)													
Shrimp, brown	0	0	12420	166162	805879	587871	183147	199399	131761	357126	141615	3275	2588655
Shrimp, white	41	0	0	261	4051	. 0	3376	5190	14097	4497	4607	2214	38334
Total shrimp	41	0	12420	166423	809930	587871	186523	204589	145858	361623	146222	5489	2626989
Crab, blue	14	169	648	1325	540	488	2639	2754	287	423	287	98	9671
Crab, stone	21	0	1584	1021	327	195	2149	2223	5120	0	0	120	12759
Squid, unclassified	13	29	215	1306	1583	901	534	288	183	81	6	0	5137
Total shellfish	88	198	14867	170074	812380	589455	191844	209853	151448	362126	146515	5707	2654556
Grand Total	53865	19963	32336	184553	835522	616291	251889	257468	202888	392369	154613	29069	3030827

Table E.7. Weight (lb) of each species, except shrimp, landed commercially from Gulf of Mexico grid zone 20.0 during 1997.

Species	Jan	Feb	Harch	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
FINFISH													
Atlantic croaker	0	0	. 0	0	0	0	0	0	0	17	0	0	17
Cobia	79	17	0	0	0	0	0	47	47	0	0	0	190
Dolphin	0	20	0	0	0	0	0	14	0	409	0	0	443
Eels, cusk	0	0	40	0	0	68	49	0	25	0	0	0	182
Greater amberjack	131	22	295	171	199	32	1140	534	98	1039	89	0	3750
Grouper, black	0	0	0	0	0	0	0	0	0	91	0	0	91
Grouper, unclassified	271	262	584	559	943	745	915	595	408	1192	235	215	6924
Grouper, warsaw	407	42	410	217	0	289	0	0	480	690	0	0	2535
Grouper, yellowedge	1344	369	399	3571	791	5640	0	0	3447	2010	0	0	17571
Mackerel, king	0	0	0	0	28	295	0	0	0	0	0	0	323
Mullet, unclassified	0	0	0	0	0	0	0	0	0	31	76	0	107
Shark, blacktip	0	97	0	0	0	0	0	0	0	0	0	0	97
Shark, unclassified	51844	33695	27228	13862	420	1810	225	0	1541	421	0	0	131046
Snapper, red	0	8638	20226	0	0	113	0	0	4825	17728	44	. 0	51574
Snapper, unclassified	0	490	0	0	0	0	1146	6	0	23	0	0	1665
Snapper, vermilion	0	753	491	62	0	0	0	657	395	3167	151	ō	5676
Swordfish	0	4264	14492	783	0	0	0	0	0	0	0	0	19539
Tilefish	0	0	0	0	0	152	0	74	54	196	0	0	476
Triggerfish, gray	0	0	35	0	0	0		0	42	246	7	0	330
Tuna, blackfin	0	0	25	0	0	0	0	17	0	0	166	0	208
Tuna, bluefin	0	0	0	0	0	0	0	0	96	0	0	0	96
Tuna, unclassified	0	220	637	0	0	56	ō	48	0	0	0	0	961
Tuna, yellowfin	0	0	0	0	50	0	ō	0	0	ő	0	0	50
Unclassified food	0	0	42	0	0	0	ō	0	0	0	ő	Ö	42
Total finfish	54076	48889	64904	19225	2431	9200	3475	1992	11458	27260	768	215	243893
SHELLFISH											17		
Squid, unclassified	0	100	0	0	0	0	0	0	0				400
Total shellfish	0	100	ő	0	0	o	0	o	0	0	0	0	100 100
Grand Total	54076	48989	64904	19225	2431	9200	3475	1992	11458	27260	76B	215	243993

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Table E.8. Ex-vessel value (\$) of each species, except shrimp, landed commercially from Gulf of Mexico grid zone 20.0 during 1997.

Species	Jan	Feb	Harch	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Tota
FINFISH													
Atlantic croaker	0	0	0	0	0	0	0	0	0	21	0	0	21
Cobia	96	23	0	0	0	0	0	90	66	0	0	0	275
Dolphin	0	25	0	0	0	0	0	16	0	339	0	0	381
Eels, cusk	0	0	32	0	0	48	35	0	18	0	0	0	133
Greater amberjack	179	37	440	231	269	43	1637	793	139	987	120	0	4876
Grouper, black	0	0	0	0	0	0	0	. 0	0	147	0	0	147
Grouper, unclassified	518	500	1115	1068	1801	1423	1748	1136	779	2088	449	411	13035
Grouper, warsaw	639	66	640	391	. 0	442	0	0	792	1056	0	0	4026
Grouper, yellowedge	3024	749	702	9285	1337	11957	0	0	7170	4080	0	0	38304
Mackerel, king	0	0	0	0	28	266	0	0	0	0	0	0	294
Mullet, unclassified	0	0	0	0	0	0	0	0	0	60	152	0	212
Shark, blacktip	0	35	0	0	0	0	0	0	0	0	0	0	35
Shark, unclassified	25922	16233	14512	6515	181	778	94	0	503	152	Ö	0	64891
Snapper, red	0	15149	36612	0	0	102	0	0	9242	34540	89	0	95735
Snapper, unclassified	0	945	0	0	0	0	2063	5	0	21	0	o	3034
Snapper, vermilion	ō	1084	737	56	0	0	0	1183	533	5004	272	ō	8868
Swordfish	Ö	9323	36520	1409	0	0	0	0	0	0	0	ő	47252
Tilefish	0	0	0	0	0	163	0	66	48	253	o	ō	529
Triggerfish, gray	0	0	34	0	0	0	0	0	40	118	3	0	195
Tuna, blackfin	ŭ	Ö	20	0	0	0	0	8	0	0	299	0	326
Tuna, blackini	Ö	0	0	0	0	o	0	0	57	0	0	0	57
Tuna, bluefin	0	550	1433	0	0	78	0	36	0	ő	ő	0	2097
Tuna, unclassified	0	0	1433	0	135	0	0	0	0	0	0	0	135
Tuna, yellowfin	0	0	34	0	133	0	0	0	0	0	0	10.000	
Unclassified food	30378	44719	92831	18954	3750	15300	5577	3333	19388	48865	1385	411	34
Total finfish	30376	44717	72031	10734	3730	13300	3311	3333	19300	40000	1303	411	284891
SHELLFISH													
Squid, unclassified	0	45	0	0	0	0	0	0	0	0	0	0	45
Total shellfish	0	45	0	0	0	0	0	0	0	0	0	0	45
Grand Total	30378	44764	92831	18954	3750	15300	5577	3333	1938B	48865	1385	411	284936